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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/607,060	SUZUKI, SHINSUKE	
	Examiner	Art Unit	
	IAN N. MOORE	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 31 December 2007.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,3-5 and 14-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,3,5,14,15 and 17 is/are rejected.

7) Claim(s) 4 and 16 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 6-27-03;12-31-07.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 12-31-2007 was filed after the mailing date of the non-final office action on 7-30-2007. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

2. Claims 1, 3-5 and 14-17 are objected to because of the following informalities:

Claim 1 recites the clause with the optional language “**adapted to**” in line 2. In order to present the claim in a better form and to describe a positive or require steps/function to be performing (i.e. using the claim language that does not suggest or make optionally but required steps to be performed), applicant is suggested to revise the claim language such that the steps/functions, which follows “adapted to”, to be performed are required (not optional).

Claim 14 is also objected for the same reason as set forth claim 1 as set forth above.

Claim 1 recites “**an** address of a multicast source server” in lines 6 and 8. For consistency and clarification, it is suggested to change “**an** address of a multicast source server” in line 8, to “**the** address of a multicast source server”.

Claims 3-5 and 15-17 are also objected since they are depended upon objected claims 1 and 14 as set forth above.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boers (US 20040022244A1) in view of Jain (US 20030079040A1).

Regarding Claim 1, Boers discloses packet forwarding equipment (see FIG. 1, 2a-b. multicast network device, MND, (i.e. Multicast Router) 114 (e); see page 2, paragraph 29) adapted to be connected to multicast client nodes (see FIG. 1,2, multiple hosts 124; see page 2, paragraph 18; see page 3, paragraph 35) and a multicast network (see FIG. 1,2a, multicast network 100; see page 2, paragraph 27) including at least one multicast source server (see FIG. 1, multicast source/server 102(a); see page 1, paragraph 6; see page 3, paragraph 31-32), comprising:

a translation unit (see FIG. 2a, a combined mapping system of messaging engine 122, SSM mapping engine 118) a first request of joining or leaving a multicast group (see FIG. 2a, mapping/translating host membership report 204 which indicates to become a member of a multicast group (G); see page 2, paragraph 31; see page 3, paragraph 36-43) which is sent from one of said multicast client nodes that cannot designate an address of a multicast source server of the multicast group (see FIG. 2a, which is transmitted by a host 124 that cannot assign/designate a multicast source/server address 102(a); see page 2, paragraph 34; see page 3, paragraph 31-44;

see page 1, paragraph 6), into a second request of joining or leaving the multicast group with designating an address of multicast source server of the multicast group (see FIG. 2b, mapping/translating received join report message to PIM (Sa,G) 210 join the multicast group G with a source address Sa of the multicast group; see page 3, paragraph 36-44); and an interface for transferring (see FIG. 2b, output port of the MND router 114(e)) the second request to said multicast network (see page 3, paragraph 44; sending PIM (Sa,G) to multicast network (e.g. towards source server 102(a));

wherein the designated address of the multicast source server of the multicast group (see FIG. 2b, source address, Sa, of source server 102(a)) is determined by the combined mapping system 122-118) on the basis of an address of the multicast group to which said first request of joining or leaving request was sent from said multicast client node (see page 3, paragraph 41-44; Sa is computed according to the multicast group address to which join request was send from host 124).

Boers does not explicitly disclose “an address” of said multicast client node.

However, Jain teaches packet forwarding equipment (see FIG. 1, switch 100) comprising: the designated address of the source server of the multicast group (see page 4, paragraph 45; page 5, paragraph 63; explicit source address SSM) is determined by the translation unit (see FIG. 1, a combined system of forwarding engine 118, CPU 112 and CAM 106) on the basis of an address of said one of said multicast client nodes (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45; page 5, paragraph 63; source address of multicast sender/transmitter end station) and an address of the multicast group to which said first request of joining or leaving was sent from said multicast client node (see page 4, paragraph 45-53; see

page 5, paragraph 62-67; destination address (i.e. which is the first three bytes of the group address)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide “an address” of said multicast client node, as taught by Jain in the system of Boers, so that it would forward multicast packets efficiently and quickly; see Jain page 1, paragraph 11-12.

Regarding Claim 3, Boers discloses a table (see FIG. 2a, a combined table/list system of memory 116 and SSM mapping database 120 contains a table/list) comprised of a plurality of entries each indicating relations of the address of the multicast group address (see page 3, paragraph 38-39, parameters showing/indicating relation/mapping of SSM group address, G), and the address of the multicast source corresponding to the address of the multicast group (see page 3, paragraph 39-40; to source address, Sa , which corresponds to multicast group address (G)),

wherein when the first request of joining or leaving the multicast group is issued from the multicast client node which does not have a function of designating the address of the multicast source server (see FIG. 2b, when joining report message is send by host 124 that does not have a function or know the assigning/allocating Sa address; see page 2, paragraph 31; see page 3, paragraph 36-43), said table is searched for an entry including the address of the multicast group to which said first join or leave request was sent (see page 3, paragraph 38-46; the combined table/list system 116-120 is searched/queried/find for a parameter/entry that includes the multicast group address (G) to which join report was sent), thereby to designate the address of the multicast source server address indicated by the retrieved entry (see page 3, paragraph 43-44;

assigning/allocating a multicast source server 102(a) with a multicast source address Sa of queried/find/retrieved parameter).

Boers does not explicitly disclose a multicast client node “address” or “the address” of the multicast client node.

However, Jain teaches a table (see FIG. 2, Forwarding CAM 106 which contains Forwarding Information (FID)) comprised of a plurality of entries each indicating relations of the address of the multicast group (see page 4, paragraph 45; contains the data/entry each showing/indicating matching/relation/corresponding multicast group address in multicast group address table), the address of the multicast client node (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45; page 5, paragraph 63; source address of multicast sender/transmitter end station in a FID table), and the address of multicast source (see page 4, paragraph 45; page 5, paragraph 63; explicit source address SSM) corresponding to the address of multicast group (see page 4, paragraph 45-53; see page 5, paragraph 62-67; maps/relates/corresponds to destination address (i.e. which is the first three bytes of the group address)) and the address of the multicast client node (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45; page 5, paragraph 63; and source address of multicast sender/transmitter end station);

said table is searched for an entry including the address of the multicast client node which issued said first request of joining or leaving (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45-53; page 5, paragraph 63-67; FID table is searched/lookup for an data including the source address of multicast sender/transmitter end station) and the address of the multicast group to which said first request joining or leaving was sent (see page 4, paragraph

45; and multicast group address in multicast group address table to which request to join/prune message has to be send), thereby to designate the address of the multicast source server indicated by the retrieved entry (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45-53; page 5, paragraph 63-67; allocating/assigning an explicit source server with explicit source address SSM shows/indicates by the matched data).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a multicast client node “address”, as taught by Jain in the system of Boers, so that it would forward multicast packets efficiently and quickly; see Jain page 1, paragraph 11-12.

Regarding Claim 5, Boers discloses said table (see FIG. 2a, a combined table/list system of memory 116 and SSM mapping database 120 contains a table/list) is provided either in the packet forwarding equipment (see FIG. 1, 2a-b. multicast network device, MND, (i.e. Multicast Router) 114 (e); see page 2, paragraph 29) or in a different apparatus (see FIG. 2a, System 126 with database 128) which can be accessed by the packet forwarding equipment via a communication line (see FIG. 2a, which can be accessed by the MND 114(e) via a communication link between them); see page 3, paragraph 42-44.

5. Claims 14, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boers and Jain, and further in view of Basilier (US007061880B2).

Regarding Claim 14, Boers discloses Boers discloses packet forwarding equipment (see FIG. 1, 2a-b. multicast network device, MND, (i.e. Multicast Router) 114 (e); see page 2, paragraph 29) adapted to be connected to multicast client nodes (see FIG. 1,2, multiple hosts

124; see page 2, paragraph 18; see page 3, paragraph 35) and a multicast network (see FIG. 1,2a, multicast network 100; see page 2, paragraph 27) including at least one multicast source server (see FIG. 1, multicast source/server 102(a); see page 1, paragraph 6; see page 3, paragraph 31-32), comprising:

a translation unit (see FIG. 2a, a combined mapping system of messaging engine 122, SSM mapping engine 118) a first request of joining or leaving a multicast group (see FIG. 2a, mapping/translating host membership report 204 which indicates to become a member of a multicast group (G); see page 2, paragraph 31; see page 3, paragraph 36-43) which is sent from one of said multicast client nodes (see FIG. 2a, which is transmitted by a host 124; see page 2, paragraph 34; see page 3, paragraph 31-44; see page 1, paragraph 6) into a source-specific type of request of joining or leaving a source-specific multicast group (see FIG. 2b, mapping/translating received join report message to source specific multicast (SSM) PIM (Sa,G) 210 join the SSM multicast group G with a source address Sa of the multicast group; see page 2, paragraph 27; see page 3, paragraph 36-44); and

an interface for transferring (see FIG. 2b, output port of the MND router 114(e)) the second request to said multicast network (see page 3, paragraph 44; sending PIM (Sa,G) to multicast network (e.g. towards source server 102(a));

wherein an address of the multicast source server of the source-specific multicast group (see FIG. 2b, source address, Sa, of source server 102(a)) is determined by the combined mapping system 122-118) on the basis of an address of the multicast group to which said first request of joining or leaving request was sent from said multicast client node (see page 3,

paragraph 41-44; Sa is computed according to the multicast group address to which join request was send from host 124).

Boers does not explicitly disclose “an address” of said multicast client node.

However, Jain teaches packet forwarding equipment (see FIG. 1, switch 100) comprising: the designated address of the source server of the multicast group (see page 4, paragraph 45; page 5, paragraph 63; explicit source address SSM) is determined by the translation unit (see FIG. 1, a combined system of forwarding engine 118, CPU 112 and CAM 106) on the basis of an address of said one of said multicast client nodes (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45; page 5, paragraph 63; source address of multicast sender/transmitter end station) and an address of the multicast group to which said first request of joining or leaving was sent from said multicast client node (see page 4, paragraph 45-53; see page 5, paragraph 62-67; destination address (i.e. which is the first three bytes of the group address)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide “an address” of said multicast client node, as taught by Jain in the system of Boers, so that it would forward multicast packets efficiently and quickly; see Jain page 1, paragraph 11-12.

Neither Boers nor Jain explicitly discloses “any-source type”.

However, utilizing any-source type (ASM) multicast request is so well known and establish in the art as RFC standards (i.e. RFC-1112 and RFC-3569) in order to improve the combined system of Boers and Jain for the predictable result of compatibility and

interoperability. In particular, Basilier discloses utilizing any-source type (ASM) request for a multicast group (see col. 4, line 29 to col.5, line 30).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide “any-source type” multicast request as taught by Basilier, in the combined system of Boers and Jain, so that it would provide efficient approach to establishing, coordinating and managing an end-to-end multicast service for communication systems as suggested by Basilier; see Basilier col. 4, line 53-60.

Regarding Claim 15, Boers discloses a table (see FIG. 2a, a combined table/list system of memory 116 and SSM mapping database 120 contains a table/list) comprised of a plurality of entries each indicating relations of the address of the multicast group address (see page 3, paragraph 38-39, parameters showing/indicating relation/mapping of SSM group address, G), and the address of the multicast source corresponding to the address of the multicast group (see page 3, paragraph 39-40; to source address, Sa , which corresponds to multicast group address (G)),

wherein when the first request of joining or leaving the multicast group is issued from the multicast client node which does not have a function of designating the address of the multicast source server (see FIG. 2b, when joining report message is send by host 124 that does not have a function or know the assigning/allocating Sa address; see page 2, paragraph 31; see page 3, paragraph 36-43), said table is searched for an entry including the address of the multicast group to which said first join or leave request was sent (see page 3, paragraph 38-46; the combined table/list system 116-120 is searched/queried/find for a parameter/entry that includes the multicast group address (G) to which join report was sent), thereby to designate the address of

the multicast source server address indicated by the retrieved entry (see page 3, paragraph 43-44; assigning/allocating a multicast source server 102(a) with a multicast source address Sa of queried/find/retrieved parameter).

Basilier discloses “any-source type of request” as set forth above in claim 14.

Neither Boers nor Basilier explicitly disclose a multicast client node “address” or “the address” of the multicast client node.

However, Jain teaches a table (see FIG. 2, Forwarding CAM 106 which contains Forwarding Information (FID)) comprised of a plurality of entries each indicating relations of the address of the multicast group (see page 4, paragraph 45; contains the data/entry each showing/indicating matching/relation/corresponding multicast group address in multicast group address table), the address of the multicast client node (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45; page 5, paragraph 63; source address of multicast sender/transmitter end station in a FID table), and the address of multicast source (see page 4, paragraph 45; page 5, paragraph 63; explicit source address SSM) corresponding to the address of multicast group (see page 4, paragraph 45-53; see page 5, paragraph 62-67; maps/relates/corresponds to destination address (i.e. which is the first three bytes of the group address)) and the address of the multicast client node (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45; page 5, paragraph 63; and source address of multicast sender/transmitter end station);

said table is searched for an entry including the address of the multicast client node which issued said first request of joining or leaving (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45-53; page 5, paragraph 63-67; FID table is searched/lookup for an

data including the source address of multicast sender/transmitter end station) and the address of the multicast group to which said first request joining or leaving was sent (see page 4, paragraph 45; and multicast group address in multicast group address table to which request to join/prune message has to be send), thereby to designate the address of the multicast source server indicated by the retrieved entry (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45-53; page 5, paragraph 63-67; allocating/assigning an explicit source server with explicit source address SSM shows/indicates by the matched data).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a multicast client node “address”, as taught by Jain in the combined system of Boers and Basilier, so that it would forward multicast packets efficiently and quickly; see Jain page 1, paragraph 11-12.

Regarding Claim 17, Boers discloses said table (see FIG. 2a, a combined table/list system of memory 116 and SSM mapping database 120 contains a table/list) is provided either in the packet forwarding equipment (see FIG. 1, 2a-b. multicast network device, MND, (i.e. Multicast Router) 114 (e); see page 2, paragraph 29) or in a different apparatus (see FIG. 2a, System 126 with database 128) which can be accessed by the packet forwarding equipment via a communication line (see FIG. 2a, which can be accessed by the MND 114(e) via a communication link between them); see page 3, paragraph 42-44.

Allowable Subject Matter

6. **Claims 4 and 16** are objected to as set forth in paragraph 2 and being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening. The following is a statement of reasons for the indication of allowable subject matter:

Response to Arguments

7. Applicant's arguments with respect to claims 1, 3, 5, 14, 15 and 17 have been considered but are moot in view of the new ground(s) of rejection.

Regarding claims 1, 3, 5, 14, 15 and 17, the applicant argued that, “...the combined of Boers and Jain fails to teaches a translation unit for translating a first request...source server of the multicast group...claim 1 as amended is not obvious in view of the combination of Boers and Jain...New claim 14 is also patentably distinguishable from the art of the record...” in pages 8-11.

In response to applicant's argument, the examiner respectfully disagrees with the argument above.

Boers discloses a translation unit (see FIG. 2a, a combined mapping system of messaging engine 122, SSM mapping engine 118) a first request of joining or leaving a multicast group (see FIG. 2a, mapping/translating host membership report 204 which indicates to become a member of a multicast group (G); see page 2, paragraph 31; see page 3, paragraph 36-43) which is sent from one of said multicast client nodes that cannot designate an address of a multicast source server of the multicast group (see FIG. 2a, which is transmitted by a host 124 that cannot assign/designate a multicast source/server address 102(a); see page 2, paragraph 34; see page 3, paragraph 31-44; see page 1, paragraph 6), into a second request of joining or leaving the multicast group with designating an address of multicast source server of the multicast group

(see FIG. 2b, mapping/translating received join report message to PIM (Sa,G) 210 join the multicast group G with a source address Sa of the multicast group; see page 3, paragraph 36-44).

Jain teaches packet forwarding equipment (see FIG. 1, switch 100) comprising: the designated address of the source server of the multicast group (see page 4, paragraph 45; page 5, paragraph 63; explicit source address SSM) is determined by the translation unit (see FIG. 1, a combined system of forwarding engine 118, CPU 112 and CAM 106) on the basis of an address of said one of said multicast client nodes (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45; page 5, paragraph 63; source address of multicast sender/transmitter end station) and an address of the multicast group to which said first request of joining or leaving was sent from said multicast client node (see page 4, paragraph 45-53; see page 5, paragraph 62-67; destination address (i.e. which is the first three bytes of the group address)).

Thus, it is clear that the combined system of Boers and Jain discloses the claimed invention in view of the above.

In response to applicant's argument that claim 1 is not obvious in view of the combination of Boers and Jain, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding new claim 14, the argument is moot in view of the new ground(s) of rejection

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

9. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ian N. Moore
Examiner
Art Unit 2616

/I. N. M./
Examiner, Art Unit 2616
3-10-08

/Doris To/
Supervisory Patent Examiner, Art Unit 2616